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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/532,709

04/27/2005

Takeshi Kawai

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EXAMINER

KEYS, ROSALYND ANN

ART UNIT

PAPER NUMBER

1621

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

01/30/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/532,709		KAWAI ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Rosalynd Keys		1621	

**– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –**  
**Period for Reply**

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Status of Claims***

1. Claims 1-14 are pending.  
Claims 1-14 are rejected.

### ***Priority***

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Information Disclosure Statement***

3. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:
  1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.

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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lien et al. (US 2,868,854) in view of Frey (US 2,372,320).

Lien et al. teach isomerization of alkyl benzenes in the presence of  $\text{HF-BF}_3$  (see entire disclosure, in particular column 5, line 65 to column 7, line 75).

Lien et al. differ from the instant invention in that Lien et al. do not disclose the origin of their starting alkyl benzenes.

Frey disclose a process for preparing alkyl benzenes by alkylation of benzene in the presence of HF (see entire disclosure, in particular page 2, column 1, lines 28-60 and page 3, column 2, line 22 to page 4, column 1, line 43).

One having ordinary skill in the art at the time the invention was made would have found it obvious to utilize the alkyl benzenes of Frey in the process of Lien et al., since Frey teach that his alkyl benzenes are suitable as raw materials for various chemical processes and the alkyl benzenes of Frey meet the requirements of suitable starting materials for the process of Lien et al. (see column 2, lines 6-26).

One having ordinary skill in the art at the time the invention was made would have been motivated to make the alkyl benzenes of Lien et al. by the method of Frey, since Frey teaches that hydrofluoric acid is an excellent catalyst for the alkylation of benzene and that it is particularly advantageous in the production of ethyl benzene (see page 3, column 2, lines 22-40).

8. Claims 1-5, 7-11, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olah (US 3,766,286) in view of Frey (US 2,372,320).

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Olah teach isomerization of alkyl substituted aromatic hydrocarbons in the presence of a catalyst composition comprising a Lewis acid and Bronsted acid (see entire disclosure, in particular column 1, line 70 to column 4, line 44).

Olah differs from the instant invention in that Olah does not disclose the preparation of the feedstock for his reaction.

Frey disclose a process for preparing alkyl benzenes by alkylation of benzene in the presence of HF (see entire disclosure, in particular page 2, column 1, lines 28-60 and page 3, column 2, line 22 to page 4, column 1, line 43).

One having ordinary skill in the art at the time the invention was made would have found it obvious to utilize the alkyl benzenes of Frey in the process of Olah, since Frey teach that his alkyl benzenes are suitable as raw materials for various chemical processes and Olah teaches that any alkyl substituted aromatic hydrocarbon is suitable as a feedstock in his process.

One having ordinary skill in the art at the time the invention was made would have been motivated to make the alkyl benzenes of Olah by the method of Frey, since Frey teaches that hydrofluoric acid is an excellent catalyst for the alkylation of benzene and that it is particularly advantageous in the production of ethyl benzene (see page 3, column 2, lines 22-40).

#### ***Conclusion***


9. The comparative examples given in the Applicants specification are not sufficient to avoid the above rejections because the comparisons are not being made with the closest prior art. The prior art references above show the use of alkylation in the presence of HF and isomerization of alkyl benzenes in the presence of a Lewis acid in combination with a Bronsted acid, including HF-BF<sub>3</sub>.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rosalynd Keys whose telephone number is 571-272-0639. The examiner can normally be reached on M-W & F 5:30-8:30 am & 1-5 pm;Th 5:30 am-5:30 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thurman Page can be reached on 571-272-0602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Rosalind Keys  
Primary Examiner  
Art Unit 1621

August 21, 2006